

In the Claims:

1. (Previously presented) An RFID device for non-contact communication with a reading device via modulated electromagnetic signals that contain at least one of data and commands packed in data frames, the RFID device comprising:

synchronizing circuit configured to effect synchronization of the RFID device with the reading device responsive to receipt of a data frame containing synchronizing information from the reading device;

a data control unit configured and arranged to, in response to receipt by the reading device of a data frame containing synchronizing information, receive data frames with the synchronization information removed by the synchronizing circuit, and configured and arranged to receive data frames from a command not containing synchronization information for effecting synchronization of the RFID device received by the reading device;

synchronization status test circuit configured to detect whether the RFID device runs synchronously with the reading device and to switch on the synchronizing circuit responsive to detecting that the RFID device is not synchronized with the reading device,

wherein the RFID device is configured to receive multiple different types of commands as groups of data frames from the reading device, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.

2. (Previously presented) An RFID-device as claimed in claim 1, in which the synchronizing circuit is configured in such a manner that every received data frame is to be treated as a data frame containing synchronization information.

3. (Previously presented) An RFID device as claimed in claim 1, in which the synchronization status test circuit cooperates with a data frame error counter to count the number of erroneously received data frames and in the event of exceeding of a specified error limit, to switch on the synchronizing circuit.

4. (Previously presented) An RFID device as claimed in claim 3, in which the synchronization status test circuit is configured to switch off the synchronizing circuit in the event of a correctly received data frame.

5. (Previously presented) An RFID device as claimed in claim 1, in which the synchronization status test circuit is configured for detection of synchronization start signals in the received electromagnetic signals which synchronization start signals are transmitted outside the data frame, where the synchronization status test circuit switches on the synchronizing circuit on detection of a synchronization start signal.

6. (Previously presented) An RFID-device as claimed in claim 5, in which the synchronization status test circuit is configured to detect a degree of modulation of the received electromagnetic signals and to recognize as a synchronization start signal a received electromagnetic signal whose modulation factor lies in a specified range.

7. (Previously presented) An RFID device as claimed in claim 6, in which the synchronization status test circuit is configured to recognize as a synchronization start signal a received electromagnetic signal whose modulation factor is over 50% up to complete field disconnection.

8. (Previously presented) An RFID-device as claimed in claim 1, in which the synchronization status test circuit cooperates with a Watchdog-Timer to switch on the synchronizing circuit after the lapsing of a specified interval, during which no correct data frame could be received.

9. (Previously presented) An RFID device for non-contact communication with a reading device via modulated electromagnetic signals that contain at least one of data and commands packed in data frames, the RFID device comprising:

synchronizing circuit configured to effect synchronization of the RFID device with the reading device responsive to receipt of a data frame containing synchronizing information from the reading device;

a data control unit configured and arranged to, in response to receipt by the reading device of a data frame containing synchronizing information, receive data frames with the synchronization information removed by the synchronizing circuit, and configured and arranged to receive data frames from a command not containing synchronization information for effecting synchronization of the RFID device received by the reading device;

synchronization status test circuit configured to detect whether the RFID device runs synchronously with the reading device and to switch on the synchronizing circuit responsive to detecting that the RFID device is not synchronized with the reading device, the synchronization status test circuit including two synchronizing circuits which can be run alternately in such a manner that one of the synchronizing circuits processes every received data frame as a data frame containing synchronization information and tries to read the synchronization information for executing a synchronization routine, while the other synchronizing circuit forwards every received data frame to the data control unit where the operation of the two synchronization circuits is switched over if a synchronization routine of one of the synchronization circuits is successful;

wherein the RFID device is configured to receive multiple different types of commands as groups of data frames from the reading device, and wherein at least one of the received commands does not contain synchronizing information for effecting synchronization of the RFID device with the reading device.

10. (Previously presented) An RFID-device as claimed in claim 1, in which the RFID-device is configured as a transponder.

11. (Previously presented) An RFID system, comprising:

at least one reading device and at least one transponder, the reading device and the transponder configured for non-contact communication via modulated electromagnetic signals that contain at least one of data and commands packed in data frames,

the reading device configured for transmitting multiple different types of commands as groups of data frames to the transponder, at least one of the commands containing synchronization information for effecting synchronization of the reading

device with the transponder and at least one of the commands not containing the synchronization information,

the transponder including synchronization circuit configured to effect synchronization of the transponder with the reading device responsive to receipt of a command that contains the synchronization information, and including synchronization status test circuit configured for detecting whether the transponder runs synchronously with the reading device and to switch on the synchronization circuit responsive to detecting that the transponder is not synchronized with the reading device.

12. (Previously presented) An RFID system as claimed in claim 11, in which the reading device is configured to transmit inventory commands, responsive to the inventory commands, each transponder present in an effective area of the reading device is configured to report to the reading device.

13. (Previously presented) An RFID system as claimed in claim 11, in which the synchronization status test circuit cooperates with a data frame error counter to count the number of erroneously received data frames and in the event of exceeding of a specified error limit, to switch on the synchronizing circuit.

14. (Previously presented) An RFID system as claimed in claim 13, in which the synchronization status test circuit is configured to switch off the synchronizing circuit in the event of a correctly received data frame.

15. (Previously presented) An RFID system as claimed in claim 11, in which the reading device is configured to send synchronization start signals as electromagnetic signals before data frames containing synchronization information, and the synchronization status test circuit of the transponder are configured for detecting the synchronization start signals in the received electromagnetic signals and to switch on the synchronization circuit on detection of a synchronization start signal.

16. (Previously presented) An RFID system as claimed in claim 15, in which the reading device is configured for sending an electromagnetic signal as a synchronization start

signal, the synchronization start signal having a modulation factor in a specified range and the synchronization status test circuit are configured to detect synchronization start signals from the modulation factor of the received electromagnetic signals.

17. (Previously presented) An RFID system as claimed in claim 16, in which the reading device is configured for sending an electromagnetic signal as a synchronization start signal with a modulation factor of over 50% up to complete field disconnection.

18. (Previously presented) An RFID system as claimed in claim 11, in which the synchronization status test circuit cooperates with a Watchdog-Timer to switch on the synchronizing circuit after the lapsing of a specified interval, during which no correct data frame could be received.

19. (Previously presented) An RFID system, comprising:

at least one reading device and at least one transponder, the reading device and the transponder configured for non-contact communication via modulated electromagnetic signals that contain at least one of data and commands packed in data frames,

the reading device configured for transmitting multiple different types of commands as groups of data frames to the transponder, at least one of the commands containing synchronization information for effecting synchronization of the reading device with the transponder and at least one of the commands not containing the synchronization information,

the transponder including synchronization circuit configured to effect synchronization of the transponder with the reading device responsive to receipt of a command that contains the synchronization information, and including synchronization status test circuit configured for detecting whether the transponder runs synchronously with the reading device and to switch on the synchronization circuit responsive to detecting that the transponder is not synchronized with the reading device; and a synchronization status test circuit and two synchronizing circuits which can be run alternately in such a manner that one of the synchronizing circuit processes every received data frame as a data frame containing synchronization information and tries to

read their synchronization information for executing a synchronization routine, while the other synchronizing circuit forwards every received data frame to the data control unit where the operations of the two synchronization units are switched over if a synchronization routine of one synchronization circuit is successful.

20. (Previously presented) An anti-collision method for determining a number of transponders in an effective area of a reading device, the reading device communicating with the transponders without contact via modulated electromagnetic signals that contain at least one of data and commands packed in data frames, the method comprising:

transmitting, by the reading device, an inventory command as a group of data frames for determination of the transponders present in the effective area, the inventory command containing synchronization information for synchronization of the reading device with the transponders;

transmitting, by each of the transponders present in the effective area and responsive to the inventory command, a response with a unique identification number that identifies the transponder to the reading device;

transmitting, by the reading device, a repeat command as a group of data frames responsive to the reading device receiving mutually colliding responses from several of the transponders, the repeat command causing the transponders to retransmit their responses and the repeat command not containing the synchronization information;

transmitting, by the reading device, a confirm command to each of the transponders whose response was received without errors, the confirm command causing each of the transponders whose response was received without errors not to respond to the repeat command and the confirm command not containing the synchronization information; and

repeating, by the reading device, transmission of confirm commands and repeat commands until none of the transponders respond within a specified time interval.

21. (Original) An anti-collision method as claimed in claim 20, in which the transponders respond to the reading device at randomly selected delays.

22. (Original) An anti-collision method as claimed in claim 21, in which the delay selectable by the transponder lies in a round, which has a number of time slots which are pre-defined and possibly variable by the reading device with durations, which are defined and possibly variable by the reading device.

23. (Original) An anti-collision method as claimed in claim 22, in which the reading device transmits nothing more than a Confirm command or a Repeat command per time slot, where a time slot is optionally early scheduled by these commands.

24. (Previously presented) An anti-collision method as claimed in claim 22, in which the Repeat command triggers the transponders to start a new round.

25. (Previously presented) An anti-collision method as claimed in claim 22, in which the reading device sends a Next Time Slot command, if no transponder responds within a time slot, where the Next-Time slot command is preferably sent in a data frame with synchronization information.

26. (Previously presented) An anti-collision method as claimed in claim 22, in which the anti-collision method is scheduled if no transponder responds within a round.